

REMARKS/ARGUMENTS

Applicant respectfully requests reconsideration of this application in view of the present amendments and the following remarks. By this amendment, claims 1, 11 and 17 are amended, and claim 4 is canceled. As a result, upon entry of this amendment claims 1-3 and 5-36 are pending and at issue in this case, with claims 1, 11, 17, 23 and 31 being independent claims. It is believed that no additional fees are due for the consideration of this paper. However, if additional fees are due, the Commissioner is authorized to charge such fees to deposit account number 13-2855. A copy of this paper is enclosed.

Amendments to the Claims

It is respectfully submitted that the claims as amended above are supported by the application as originally filed in the Patent Office on September 29, 1999, that the amended claims satisfy the written description requirement and the other requirements of 35 U.S.C. § 112, and that no new matter is being added. Claim 1 is amended to incorporate the limitations of canceled claim 4 and to more clearly recite that the field device has a first memory with stored process control program instructions and a second memory storing the downloaded process control program instructions while the field device is enabled to execute the stored process control program instructions to perform process control. Claim 1 is further amended to more clearly recite that the stored process control program instructions are replaced by the downloaded process control program instructions, and that the field device discontinues executing the stored process control program instructions and executes the downloaded process control program instructions after being downloaded and stored. Claim 1 as amended is supported by previous claim 1 and canceled claim 4. Amended claim 1 is further supported by the application as originally filed at least at Fig. 2 and page 12, lines 13-23, which state:

The second memory 46 of the reprogrammable field device 40 stores newly downloaded code that is used to reprogram the reprogrammable field device 40. When the reprogrammable field device 40 receives the input message over the data highway 20 containing the downloadable code, the CPU 42 writes the downloadable code into the second memory 46. The downloadable code may be received and stored in the second memory 46 while the reprogrammable field device 40 is operational and the CPU 42 is capable of concurrently executing code stored in the first memory 44 to perform

process control. Once the code is completely downloaded into the second memory 46, the reprogrammable field device 40 is taken out of service or is set to some other non-operational state for a relatively short period of time while the reprogrammable field device 40 is reprogrammed to execute the downloaded code.

Consequently, Applicants submit that no new matter is added by the amendments to claim 1. Further, replacement of the stored process control program instructions by the downloaded process control program instructions has been previously presented to and examined by the Examiner with respect to, *inter alia*, claim 7 which recites that the method includes ceasing execution of the stored process control program instructions, copying the downloaded process control program instructions to the first memory, and executing the downloaded process control program instruction in the first memory. Therefore, the amendments to claim 1 do not present new issues for consideration by the Examiner and should not necessitate further searching. Consequently, Applicants respectfully request entry of the present amendments to claim 1 and consideration of claim 1 as amended.

Claims 11 and 17 are amended hereby to more clearly recite that the first set of process control program instructions will be replaced by the downloadable process control program instructions, and the processor discontinues executing the first set of process control program instructions and begins executing the downloadable process control program instructions after being downloaded and stored. For the reasons discussed above with respect to claim 1, claims 11 and 17 as amended are supported by the specification as originally filed and do not necessitate additional searching by the Examiner. Therefore, Applicants respectfully submit that the amendments to claims 11 and 17 do not present new matter and do not raise new issues, and respectfully request entry of the present amendments to claims 11 and 17 and consideration of the claims as amended.

Response to Claim Rejections

Applicants respectfully traverse the rejection of claims 1-5, 9-13, 17-19, 23-26 as anticipated by Burns et al. (U.S. Patent. No. 5,970,430), and the rejection of claims 6 and 27 as unpatentable over Burns et al. in view of Schrier et al. (U.S. Patent No. 6,055,633). Reconsideration in view of the amendments above and remarks below is respectfully requested.

Regarding amended claim 1, the Burns et al. reference neither discloses nor suggests a method of reprogramming a field device having first and second memories with stored process control program instructions in the first memory being replaced by downloaded process control program instructions that are downloaded while the stored process control program instructions are being executed by the field device for at least three reasons. First, the diagnostic test instructions taught by Burns et al. are not process control programming instructions that are executed by the field device to perform process control functions in a process control network as recited in claim 1. The diagnostic test instructions do not control the processes of the process control network, but instead are used to test the devices in the process control network to ensure that the devices function properly when they are controlled by process control program instructions to perform process control functions. For example, at column 20, Burns et al. discloses performing a device diagnostic evaluation on the valve 109. (Burns et al., col. 20, lines 13-36). During the device diagnostic evaluation, the controller 102 tests the valve 109 by causing the valve 109 to move between fully opened and fully closed positions, and evaluates the outputs of various sensors. (Burns et al., col. 20, lines 13-25). Consequently, at this time, the valve 109 is not performing process control functions, but is instead being manipulated in a test cycle to determine how the valve 109 will operate when process control program instructions are executed by the controller 102 to perform process control functions. Therefore, because diagnostic test instructions are not executed to cause a device to perform process control, it follows that diagnostic test instructions are not process control programming instructions execute to perform process control functions as recited in claim 1.

Second, assuming, *arguendo*, that diagnostic test instructions may be construed to be process control program instructions, Burns et al. does not disclose or suggest downloading replacement instructions while the field device is executing stored instructions that are to be replaced by the downloaded instructions at all, let alone stored instructions that are being executed to perform process control functions as recited in claim 1 as amended. Burns et al. provides no disclosure whatsoever that diagnostic test instructions are downloaded while device diagnostic evaluation, such as the evaluation cited above, is being performed at the field device. Consequently, Burns et al. does not anticipate or render obvious amended claim 1 for this additional reason.

Finally, Burns et al. does not disclose a first memory having stored process control program instructions, and a second memory receiving and storing replacement downloaded process control program instructions while the stored process control program instructions to be replaced by the downloaded process control program instructions as recited in claim 1 as amended. In the rejection of previously pending claim 4, the Examiner cites to a memory of a field device recited in the Summary of the Invention section as being a first memory, and to RAM 146 of the field device 16 disclosed in Description of the Preferred Embodiments section as being the second memory. From reading the two cited portions of the specification, it appears that the cited portions refer either to the same field device, or to different field devices, but in either case Burns et al. does not appear to disclose a single field device having two memories: one memory having stored process control program instructions, and a second memory receiving and storing downloaded process control program instructions that are stored while the field device executes the stored process control program instructions to perform process control instructions as recited in claim 1. Therefore, for this additional reason, Burns et al. does not anticipate or render obvious amended claim 1 and claims 2, 3 and 5-10 depending therefrom.

In light of the foregoing, it cannot be fairly said that Burns et al. discloses a method of reprogramming a field device having a first memory having stored process control program instructions that are executed by the field device while replacement downloaded process control program instructions are downloaded and stored in a second memory. As such field devices having first and second memories are set forth in each of the rejected claims 1-3 and 5-10, the Applicants respectfully submit that the anticipation rejection in view of Burns et al. set forth by the Examiner is misplaced and should be withdrawn in view of the present amendments to claim 1. Moreover, because Burns et al. contains no suggestion to modify the field devices cited by the Examiner to store the stored process control program instructions and replacement downloaded process control program instructions simultaneously in first and second memories, respectively, the Applicants further submit that the rejected claims are not obvious in view of Burns et al.

With respect to the rejection of claim 6 as unpatentable over Burns et al. in view of Schrier et al., Burns et al. does not disclose the limitations recited in claim 1 for the reasons discussed above. Moreover, Schrier et al. does not provide the missing disclosure or suggestion of downloading process control program instructions to a field device while the

device is enabled to perform process control, and in fact teaches away from downloading process control programming instructions while a field device is enabled to perform process control. Schrier et al. discloses the termination of normal processing and halting the operation of components that are non-critical to the download operation in order to minimize the power consumption in the field device during the download. (Schrier et al., col. 4, lines 1-10). Therefore, Schrier et al. teaches away from downloading any software to the field devices, let alone downloading process control program instructions to field devices, while the field devices are enabled to perform process control. It follows, therefore, in the opinion of the Applicants that the applied references neither anticipate nor render obvious claim 6 or the remaining claims reciting the downloading of process control program instructions to a field device while the device is enabled to perform process control functions. *See In re Oetiker*, 24 U.S.P.Q.2d 1443, 1446 (Fed. Cir. 1992); *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. 1985) (the prior art must make a suggestion of or provide an incentive for the claimed combination of elements in order to establish a *prima facie* case of obviousness).

Regarding amended independent claims 11 and 17 and the claims depending therefrom, Applicants respectfully submit that Burns et al. neither discloses or suggests a system (claims 11-16) or a reprogrammable field device (claims 17-22) for the reasons discussed above with respect to claims 1-3 and 5-10. As a result, Applicants respectfully request withdrawal of the rejection of claims 11-13 and 17-19 in view of Burns et al.

Regarding claims 23 and 31 and the claims depending therefrom, Applicants respectfully submit that Burns et al. neither discloses nor suggests dividing process control program instructions into a plurality of data packets, downloading the data packets from a host device to a field device, and reassembling the downloaded data packets into the process control program instructions as recited in claims 23 and 31. Burns et al. contains no disclosure whatsoever that the host 12 cited by the Examiner divides process control program instructions into data packets before downloading the process control program instructions to the field devices. In the passage cited by the Examiner at col. 21, Burns et al. describes downloading a test (diagnostic) definition or procedure to the field device 16. However, Burns et al. does not suggest that the test definition or procedure is divided into data packets before it is downloaded. Consequently, not only does Burns et al. not disclose dividing instructions into data packets, it necessarily follows that Burns et al. neither discloses nor suggests reassembling data packets at the field device 12. The communication interface 142

cited by the Examiner is disclosed as "adding framing information to data packets according to any protocol definition." "Adding framing information to data packets" appears to suggest augmenting the data packets with information that was not previously associated with the data packets, and not *reassembling* data packets into process control program instructions that were previously divided into the data packets at a host device. Because Burns et al. fails to disclose or suggest dividing process control program instructions into data packets at a host device, downloading the data packets to a field device, and reassembling the data packets into the process control program instructions at the field device as recited in claims 23 and 31, it follows that Burns et al. neither anticipates nor renders obvious claims 23-36.

Entry and consideration of the foregoing amendments as improving the form of the application are solicited. The amendments have the effect of narrowing the issues for consideration by Examiner Le, or on appeal, and were not earlier presented because, prior to the final Office action and Examiner Le's comments therewith, these amendments were not felt necessary to obtain allowance.

For at least the foregoing reasons, reconsideration and withdrawal of the rejection of the claims and allowance of the currently pending claims are respectfully requested. Should the Examiner wish to discuss the foregoing or any matter of form in an effort to advance this application towards allowance, she is urged to telephone the undersigned at the indicated number.

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN

By



Scott E. Baxendale
Registration No. 41,605
Attorney for Applicants
Marshall, Gerstein & Borun
6300 Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6402
(312) 474-6300

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